

CLAIMS

1. Method of fixing a power light-emitting diode (1) having a metallic base (2) to a metallic heat-radiating element (3), characterised by the fact that the base (2) of the light-emitting diode is fixed to the radiating element (3) by laser spot welding (11).
2. Method according to Claim 1, characterised by the fact that the radiating element (3) is coated with a layer (C) of a metal, for example nickel, able to absorb the energy of a laser light.
3. Method according to Claim 1, characterised by the fact that the centres of the welding spots (11) are distributed substantially regularly over a contour parallel to the external perimeter of the base.
4. Method according to Claim 3, characterised by the fact that the welding spots (11) are produced in the vicinity of the external perimeter of the base (2).
5. Indicating or lighting device for a car, comprising a power light-emitting diode whose base, mainly made from copper, is fixed to a metallic heat-radiating element, for example made from copper, characterised by the fact that the base (2) of the diode is fixed by laser spot welding (11) to the radiating element (3).
6. Device according to Claim 5, characterised by the fact that the radiating element (3) is covered with a layer (C) of a metal absorbing the laser radiation, for example a layer of nickel.
7. Device according to Claim 5, characterised by the fact that the centres of the welding spots (11) are distributed substantially regularly over a contour parallel to the external perimeter of the base.
8. Device according to Claim 7, characterised by the fact that the welding spots (11) are distributed close to the external perimeter of the base (2).
9. Device according to Claim 5, characterised by the fact that the means (B) of centring the base (2) of the diode are provided on the heat-radiating element (3) and comprise projections produced in the radiating element (3).

10. Device according to Claim 5, characterised by the fact that the electrodes (1a, 1b) of the diode are laser spot welded to conductive lugs.

11. Device according to Claim 5, characterised by the fact that the heat-radiating element (3) to which the base (2) of the light-emitting diode is fixed is attached to an insulating support (4) situated on the opposite side to the diode with respect to the radiating element, this insulating support (4) comprising electrical connection lugs (9a, 9b; 19a, 19b), each electrode (1a, 1b) of the diode being connected respectively to a lug, the said insulating support (4) comprising openings (5; 14) in line with the base and openings (6a, 6b; 15a, 15b) in line with the electrodes of the diode for passage of the laser welding beam.

12. Device according to Claim 11, characterised by the fact that the connecting lugs (9a, 9b) are situated on the side of the insulating support (4) turned towards the radiating element (3).

13. Device according to Claim 11, characterised by the fact that the connecting lugs (15a, 15b) are situated on the side of the insulating support (4) opposite to the heat-radiating element (3) and the connection between each connecting lug and the corresponding electrode of the diode is effected through a window (15a, 15b) provided in the insulating support (4) and another window (13a, 13b) provided in the radiating element.

14. Device according to Claim 5, characterised by the fact that the heat-radiating element (3) to which the base (2) of the light-emitting diode is fixed is attached to an insulating support (4) situated on the same side as the diode (2) with respect to the heat radiator (3), an opening (14) being provided in the insulating support (4) in line with the base (2) of the light-emitting diode for its housing and its coming into contact with the radiator, openings (15a, 15b) being provided also for the electrodes.

15. Device according to Claim 5, characterised in that the insulating support (4) is moulded onto the heat-radiating element (3), providing openings in line with the location of the base (2) of the light-emitting diode and for the electrodes.

35

16. Device according to Claim 5, characterised in that the base (2) of the diode (1) is principally composed of copper.

17. Device according to Claim 5, characterised in that the heat radiator (3) is principally composed of copper.